

Amendments to the Claims:

Claims 1-10 cancelled.

11. (Currently Amended) A process for the preparation of optically and chemically highly pure (*R*)- and (*S*)- α -hydroxycarboxylic acids, which comprises recrystallizing impure (*R*)- and (*S*)- α -hydroxycarboxylic acids, prepared by acidic hydrolysis of the (*R*)- and (*S*)-cyanohydrins obtained by enzyme-catalyzed addition of a cyanide group to the corresponding aldehydes or ketones, said recrystallization being performed in an aromatic hydrocarbon, optionally in the presence of a cosolvent selected from the group consisting of ethers and ketones, and obtaining optically and chemically highly pure (*R*)- and (*S*)- α -hydroxycarboxylic acids having an optical purity of over 98%ee.

12. (Previously Presented) The process as claimed in claim 11, wherein the impure (*R*)- and (*S*)- α -hydroxycarboxylic acids are prepared by acidic hydrolysis of the (*R*)- and (*S*)-cyanohydrins obtained by enzyme-catalyzed addition of a cyanide group donor to the corresponding optionally substituted aliphatic, aromatic or heteroaromatic aldehydes or ketones.

13. (Previously Presented) The process as claimed in claim 11, wherein impure, aromatic (*R*)- and (*S*)- α -hydroxycarboxylic acids of the formula $\text{Ar}-(\text{CH}_2)_n\text{CH}(\text{OH})\text{CO}_2\text{H}$ in which *n* is 0 or an integer from 1 to 5 and Ar is an aryl or heteroaryl radical which is unsubstituted or mono- or polysubstituted by OH, C₁-C₄-alkyl or -alkoxy, thioalkyl, halogen, optionally substituted phenyl or phenoxy, amino or nitro, are employed.

14. (Previously Presented) The process as claimed in claim 11, wherein impure (*R*)-2-chloromandelic acid is employed as the impure (*R*)- α -hydroxyacid.

15. (Cancelled)

16. (Currently Amended) A process for the preparation of chemically and optically highly pure (*R*)- and (*S*)- α -hydroxycarboxylic acids, which comprises treating the hydrolysis solution obtained by acidic hydrolysis of the (*R*)- and (*S*)-cyanohydrins, prepared by enzyme-catalyzed addition of a cyanide group donor to the corresponding aldehydes or ketones, directly with an aromatic hydrocarbon, optionally in combination with a cosolvent selected from the group consisting of aldehydes and ketones, then extracting the mixture at hydrolysis temperature, whereupon after cooling of the organic phase the corresponding chemically and optically highly pure (*R*)- and (*S*)- α -hydroxycarboxylic acids having an optical purity of over 98%ee crystallize out.

17. (Previously Presented) The process as claimed in claim 16, wherein chemically and optically highly pure aromatic (*R*)- and (*S*)- α -hydroxycarboxylic acids of the formula $\text{Ar}-(\text{CH}_2)_n\text{CH}(\text{OH})\text{CO}_2\text{H}$ in which n is 0 or an integer from 1 to 5 and Ar is an aryl or heteroaryl radical which is unsubstituted or substituted by OH, C_1 - C_4 -alkyl or alkoxy, thioalkyl, halogen, optionally substituted phenyl or phenoxy, amino or nitro, are prepared.

18. (Previously Presented) The process as claimed in claim 11 or 16, wherein toluene, xylene, benzene, ethylbenzene, isopropylbenzene or chlorobenzenes are employed as aromatic hydrocarbons.

19. (Previously Presented) The process as claimed in claim 11 or 16, wherein the cosolvent employed is a solvent which increases the solubility of the hydroxycarboxylic acid in the organic phase and which is separable by distillation, in an amount from 5 to 50% by volume.

20. (Cancelled)

21. (Previously Presented) The process as claimed in claim 20 wherein the ether is tetrahydrofuran, methyl tert-butyl ether or dimethoxyethane.

22. (Previously Presented) The process according to claim 20 wherein the ketone is methylisobutyl ketone.

23. (Currently Amended) A process for the preparation of optically and chemically highly pure (*R*)- and (*S*)- α -hydroxycarboxylic acids, which consists essentially of recrystallizing impure (*R*)- and (*S*)- α -hydroxycarboxylic acids, prepared by acidic hydrolysis of the (*R*)- and (*S*)-cyanohydrins obtained by enzyme-catalyzed addition of a cyanide group to the corresponding aldehydes or ketones, in an aromatic hydrocarbon, optionally in the presence of a co-solvent selected from the group consisting of aldehydes and ketones, to form an organic phase and wherein the co-solvent increases the solubility of the hydroxycarboxylic acids in said organic phase, and obtaining optically and chemically highly pure (*R*)- and (*S*)- α -hydroxycarboxylic acids having an optical purity of over 98%ee.